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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/875,329	06/05/2001	Steven A. Morley	010327	7520

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QUALCOMM, INC
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EXAMINER

RAO, ANAND SHASHIKANT

ART UNIT PAPER NUMBER

2621

DATE MAILED: 04/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/875,329

Applicant(s)

MORLEY ET AL.

Examiner

Andy S. Rao

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/4/05.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-5, 7-10, 12-15, 17-20, 22-25, 27-31 and 33-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-5, 7-10, 12-15, 17-20, 22-25, 27-31 and 33-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed with respect to claims 2-5, 7-10, 12-15, 22-25, 27-31, and 33-35 as filed in 2/3/06 have been fully considered but they are not persuasive.

2. Claims 2-5, 7-10, 12-15, 17-20, 22-25, 27-31, and 33 rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al., (hereinafter referred to as "Kim") in view of Thyagarajan et al., (hereinafter referred to as "Thyagarajan") and Donovan, as was set forth in the Office Action of 8/4/2005.

3. The Applicant presents one argument contending the Examiner's rejection of claims 2-5, 7-10, 12-15, 17-20, 22-25, 27-31, and 33 rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al., (hereinafter referred to as "Kim") in view of Thyagarajan et al., (hereinafter referred to as "Thyagarajan") and Donovan, as was set forth in the Office Action of 8/4/05.

However after a careful consideration of the argument presented, the Examiner must respectfully disagree for the reasons that follow, and maintains the grounds of rejection and further applies them to the newly added claims.

After summarizing the prosecution of the case and pending rejection (Amendment of 8/4/05: page 9, lines 9-27), the Applicants argue that Donovan is not combinable with primary and secondary references because Donovan teaches filtering on a line-by-line basis instead of the block implementation of the primary and secondary references (Amendment of 8/4/05: page 10, lines 1-27; page 11, lines 1-13). The Examiner respectfully disagrees. It is noted that the Applicant relied only upon the invention summary of the Donovan reference which establishes the processing as being applied to video lines. However, it is noted that the filtering is applied to

Art Unit: 2621

multiple lines at the same time (Donovan: column 5, lines 23-45), and pair of lines with the horizontal application of the coefficients (Donovan: column 9, lines 57-63), and thus would be applicable to a multi-line configuration such as a block. Accordingly, the Examiner maintains that since Donovan teaches filtering on a multiple line basis, it does not teach away from primary and secondary references. Even if Donovan were restricted to a single line application, the Examiner maintains that since that single line could be represented in row/column format, the teaching would be applicable to teachings of the primary and secondary references which also show that a block is reduced to a row/column representation. It is just that with a single line representation, there would only be one row and as many columns as there are pixels in that particular line. Accordingly, the Examiner maintains that Donovan is combinable with the primary and secondary references.

A detailed rejection of claims 34-35 follows below.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al., (hereinafter referred to as “Kim”) in view of Thyagarajan et al., (hereinafter referred to as “Thyagarajan”) and Donovan.

Regarding independent claim 34, Kim discloses a processor for decimating a digital image represented by a plurality of pixels (Kim: column 4, lines 45-50), said processor being configured to: divide the digital image into a plurality of blocks (Kim: column 6, lines 32-65), wherein each block may be represented as a plurality of elements within a plurality of columns and rows, and filter each element of each column of the block (Kim: column 12, lines 10-60); and decimate the blocks (Kim: column 12, lines 60-67; column 13, lines 1-10), as in claim 8. However, Kim fails to disclose filtering each element of each column of the block, where given a column, weighting the previous column 25%, the current column 50%, and the next column 25%; and decimating, selectively, certain ones of the blocks based upon predetermined criteria. Thyagarajan discloses the selective decimation of each element of each column of the block of the digital images based on predetermined criteria (Thyagarajan: column 5, lines 35-67; column 6, lines 1-50) in order to preserve features of blocks by preventing the blocking effect (Thyagarajan: column 4, lines 20-30), as in the claim. Accordingly, given the Thyagarajan teaching, it would have been obvious for one of ordinary skill in the art to incorporate Thyagarajan's teaching of selective decimation based on predetermined criteria, into the Kim processor in order to prevent blocking artifacts and thus preserve features of blocks. The Kim processor, now incorporating Thyagarajan's teaching of selectively decimating blocks based on predetermined criteria, has a majority of the features of claim 8, but fails to disclose having filtering each element of each column of the block, where given a column, weighting the previous column 25%, the current column 50%, and the next column 25%, as in the claim. Donovan discloses that a filter weighting of current columns of blocks where the 25%-50%-25% configuration is known (Donovan: column 9, lines 30-65: mode of $\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{4}$) in order to allow for

Art Unit: 2621

scaling (decimation) between different scan line formats (Donovan: column 8, lines 15-32).

Accordingly, given this teaching it would have been obvious for one of ordinary skill in the art to incorporate the Donovan teaching of weighing coefficients of $\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{4}$ for a current column of pixels into the Kim-Thyagarajan processor, in order to allow the composite method to scale between different scan line formats. The Kim processor, now incorporating the Donovan teaching of weighting coefficients of $\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{4}$ and Thyagarajan's selective decimation has all of the features of claim 34.

Regarding independent claim 34, Kim discloses a processor for decimating a digital image represented by a plurality of pixels (Kim: column 4, lines 45-50), said processor being configured to: divide the digital image into a plurality of blocks (Kim: column 6, lines 32-65), wherein each block may be represented as a plurality of elements within a plurality of columns and rows, and filter each element of each column of the block (Kim: column 12, lines 10-60); and decimate the blocks (Kim: column 12, lines 60-67; column 13, lines 1-10), as in claim 34. However, Kim fails to disclose filtering each element of each column of the block, where given a column, weighting the previous column 25%, the current column 50%, and the next column 25%; and decimating, selectively, certain ones of the blocks based upon predetermined criteria. Thyagarajan discloses the selective decimation of each element of each column of the block of the digital images based on predetermined criteria (Thyagarajan: column 5, lines 35-67; column 6, lines 1-50) in order to preserve features of blocks by preventing the blocking effect (Thyagarajan: column 4, lines 20-30), as in the claim. Accordingly, given the Thyagarajan teaching, it would have been obvious for one of ordinary skill in the art to incorporate Thyagarajan's teaching of selective decimation based on predetermined criteria, into the Kim

Art Unit: 2621

processor in order to prevent blocking artifacts and thus preserve features of blocks. The Kim processor, now incorporating Thyagarajan's teaching of selectively decimating blocks based on predetermined criteria, has a majority of the features of claim 34, but fails to disclose having filtering each element of each column of the block, where given a column, weighting the previous column 25%, the current column 50%, and the next column 25%, as in the claim.

Donovan discloses that a filter weighting of current columns of blocks where the 25%-50%-25% configuration is known (Donovan: column 9, lines 30-65: mode of $\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{4}$) in order to allow for scaling (decimation) between different scan line formats (Donovan: column 8, lines 15-32).

Accordingly, given this teaching it would have been obvious for one of ordinary skill in the art to incorporate the Donovan teaching of weighing coefficients of $\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{4}$ for a current column of pixels into the Kim-Thyagarajan processor, in order to allow the composite method to scale between different scan line formats. The Kim processor, now incorporating the Donovan teaching of weighting coefficients of $\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{4}$ and Thyagarajan's selective decimation has all of the features of claim 34.

Regarding independent claim 35, Kim discloses a method of decimation of a digital image, the digital image represented by a plurality of pixels (Kim: figure 3B), the method comprising: dividing the digital image into a plurality of blocks (Kim: column 6, lines 32-65), wherein each block may be represented as a plurality of elements within a plurality of columns and rows, decimating further comprising: filtering each element of each column of the block (Kim: column 12, lines 10-60); and decimating the blocks (Kim: column 12, lines 60-67; column 13, lines 1-10), as in claim 35. However, Kim fails to disclose filtering each element of each column of the block, where given a column, weighting the previous column 25%, the current

Art Unit: 2621

column 50%, and the next column 25%; and decimating, selectively, certain ones of the blocks based upon predetermined criteria with the method being implemented on a computer readable medium. Thyagarajan discloses the selective decimation of each element of each column of the block of the digital images based on predetermined criteria (Thyagarajan: column 5, lines 35-67; column 6, lines 1-50) in order to preserve features of blocks by preventing the blocking effect (Thyagarajan: column 4, lines 20-30) with the method being implemented on a computer readable medium (Thyagarajan: column 3, lines 45-50: obviously includes a computer readable medium for software in order to achieve computational efficiency with compact hardware), as in the claim. Accordingly, given the Thyagarajan teaching, it would have been obvious for one of ordinary skill in the art to incorporate Thyagarajan's teaching of selective decimation based on predetermined criteria, into the Kim decimation method in order to prevent blocking artifacts and thus preserve features of blocks. The Kim method, now incorporating Thyagarajan's teaching of selectively decimating blocks based on predetermined criteria as implemented on a computer readable medium, has a majority of the features of claim 35, but fails to disclose having filtering each element of each column of the block, where given a column, weighting the previous column 25%, the current column 50%, and the next column 25%, as in the claim.

Donovan discloses that a filter weighting of current columns of blocks where the 25%-50%-25% configuration is known (Donovan: column 9, lines 30-65: mode of $\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{4}$) in order to allow for scaling (decimation) between different scan line formats (Donovan: column 8, lines 15-32).

Accordingly, given this teaching it would have been obvious for one of ordinary skill in the art to incorporate the Donovan teaching of weighing coefficients of $\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{4}$ for a current column of pixels into the Kim-Thyagarajan computer implemented method, in order to allow the composite

Art Unit: 2621

method to scale between different scan line formats. The Kim method, now incorporating the Donovan teaching of weighting coefficients of $\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{4}$ and Thayagarajan's selective decimation as implemented on computer readable medium, has all of the features of claim 35.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andy S. Rao whose telephone number is (571)-272-7337. The examiner can normally be reached on Monday-Friday 8 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on (571)-272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2621

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Andy S. Rao
Primary Examiner
Art Unit 2621

asr
April 11, 2006

ANDY RAO
PRIMARY EXAMINER

